

## FUSEnet Project

The Foresight and Understanding from Scientific Exposition (FUSE) program is a newly launched research program of the Intelligence Advanced Research Projects Activity (IARPA). FUSE research aims to provide early warning of emerging science and technology capabilities across a wide range of technical areas and languages by discovering trends and connections at a speed, scale, and comprehensiveness that exceeds human capacity. FUSE aims to develop and test a quantitative engine that continuously scans full-length text of a representative set of the published worldwide scientific and technical literature for time-dependent, pattern-based signals indicative of new capability emergence and development.

Under the sponsorship of the FUSE Program, an Oak Ridge National Laboratory (ORNL) Computational Team called FUSEnet was assembled. They quickly stood up a virtualized analytics cloud in the ORNL Data Center. This cloud consists of 192 computing cores combined with hundreds of terabytes of storage on operating virtual machines for an initial 150 external users through the Open Science Network. Within this cloud, resides the FUSE Program search indexing and analysis for 'Big Data,' which will ultimately be comprised of over 100 million unstructured scientific published data.

The cloud is designed to scale, computing performance used for rapidly organizing volumes of ever-increasing data, and computationally garnering new knowledge and insights into petabytes of storage.

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